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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,400	03/31/2000	Michael Aleandrovich	ACH2696	2198

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EXAMINER

NORTON, NADINE GEORGIANNA

ART UNIT	PAPER NUMBER
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1764

7

DATE MAILED: 10/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/540,400

Applicant(s)

ALEANDROVICH ET AL.

Examiner

Nadine Norton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Withdrawal of Claim Rejections Under 35 USC § 112

Applicants' amendments filed 8-8-02 in paper no. 6 are sufficient to overcome the previous 112 rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al.(5,468,709).

Applicants are claiming a process for reducing the sulfur content of a hydrocarbon feedstock to a value less than 200ppm. Applicants' process comprises contacting the feed with a catalyst comprising a Group VIII metal, a Group VIB metal and an organic additive on a carrier. The dependent claims define specific organic additives.

The reference of Yamaguchi et al.(5,468,709) discloses a catalyst suitable for desulfurizing a hydrocarbon feed containing at least 2.87% sulfur, such as a LGO. See column 47, lines 45-55. The catalyst comprises a group VIII metal (nickel or cobalt), a Group VIB metal (molybdenum), an additive and a support. See column 4, lines 1-15 and 45-62. The reference teaches that suitable additives include ethylene glycol or a polysaccharide. See column 4, lines 50-54 and column 6, lines 12-24. Yamaguchi et al.(5,468,709) also discloses that the catalyst can be presulfided in situ. See column 9, lines 55-65.

The reference of Yamaguchi et al.(5,468,709) succeeds in teaching the use of a catalyst for desulfurization of an oil with components corresponding to those claimed by applicants.

Several differences are noted between the reference of Yamaguchi et al.(5,468,709) and applicants' claimed invention. It is noted that the reference is silent about the feed boiling point and sulfur amount.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to treat any sulfur containing feed, including a feed with the specific boiling point and sulfur content claimed by applicants, by the process of Yamaguchi et al.(5,468,709) because it does not limit the specific types of sulfur containing oils. In the absence of unexpected results, it would appear that one of ordinary skill could treat any oil they desire to desulfurize by the disclosed process. Treatment of applicants' specific oil would yield a product with a sulfur content defined in applicants claims.

In addition, it is noted that the reference is silent about a second desulfurization step as defined in applicants' claim 8. However, applicants' second desulfurization step is considered to be a repetition of the first desulfurization of the first. It would have been obvious to one of

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ordinary skill in the art at the time the invention was made to repeat the desulfurization step of Yamaguchi et al.(5,468,709) because it is within the level of ordinary skill in the art to repeat a known processing step until a desired sulfur removal level is obtained.

Claim Rejections - 35 USC § 103

Claims 1-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over (EP 0 870 817 A1) in view of Yamaguchi et al.(5,468,709).

The reference of (EP 0 870 817 A1) discloses a two stage desulfurization process for hydrocarbon feedstock with a 95% boiling point of 450°C or less. See abstract, column 1, line 4. The catalyst comprises group VI and VIII metals (e.g. nickel, cobalt, molybdenum). See page 2, lines 6-8 and 45-50. The catalyst can be employed in sulfided form (can be sulfided in situ). See page 2, lines 55-60. The process can involve two hydrogenation steps. See abstract, column 2, paragraph 2. The final product comprises less than 350 ppm sulfur.

The reference of (EP 0 870 817 A1) succeeds in disclosing a desulfurization process with steps, a feed and a group VI/VIII catalyst sulfided catalyst corresponding to those claimed by applicants.

A difference is noted between the process of (EP 0 870 817 A1) and applicants' claimed invention. The reference does not disclose the use of applicants' claimed additives.

The reference of Yamaguchi et al.(5,468,709) is cited for the general teaching that applicants' claimed additives are known to increase the activity of Group VIII/IV desulfurization catalysts. See abstract and column 6, lines 10-45.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the group VIII/VI catalyst of (EP 0 870 817 A1) to include the additives defined in applicants' present claims because the reference of Yamaguchi et al.(5,468,709) illustrates that such additives are known to increase the activity of group VIII/VI desulfurization catalysts. One of ordinary skill in the art desiring increased desulfurization would be motivated to include applicants' additives.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Response to Arguments

Applicants' arguments filed 8-8-02 in paper no.6 have been fully considered but they are not persuasive.

Applicants' arguments asserting that the reference of Yamaguchi et al.(5,468,709) does not suggest a feedstock containing 500 ppm or less being reduced to less than 200 ppm are not persuasive. It is maintained that the pending rejection above addresses this obvious distinction. Applicants' have not provided arguments against the specific statement of obviousness above.

Applicants' arguments that there would be no incentive for one of ordinary skill in the art to use ultra-deep hydrodesulfurization and that it would not be obvious to try the organic additive disclosed by Yamaguchi et al.(5,468,709) in an ultra-deep hydrodesulfurization process are not persuasive in distinguishing the pending claims. In response, it is maintained that the teachings

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of Yamaguchi et al.(5,468,709) do not exclude applicants' specific ultra-deep hydrodesulfurization because the amount of sulfur removal encompassed by the reference is not restricted. The statement of obviousness in the rejection above provides for a method reading on applicants' ultra-deep hydrodesulfurization.

Applicants' arguments asserting that EP 0 870 817 does not disclose or suggest a hydrodesulfurization process where the catalyst used contains an organic additive and that there is no incentive to use the organic additive of Yamaguchi et al.(5,468,709) in combination with the EP 0 870 817 catalyst are not persuasive. In response, it is maintained that EP 0870 817 is properly combined with Yamaguchi et al.(5,468,709). Motivation to combine the organic additive disclosed by Yamaguchi et al.(5,468,709) with the composition of EP 0 870 817 exists because Yamaguchi et al.(5,468,709) teaches that the activity of Group VIII/IV desulfurization catalysts are increased by such additives. One of ordinary skill would be motivated to include the additive of Yamaguchi et al.(5,468,709)in the Group VIII/IV EP 0 870 817 catalyst in order to desirably increase catalyst activity.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadine Norton whose telephone number is 703-305-2667. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0661.

N.N.

October 17, 2002

NADINE G. NORTON
PRIMARY EXAMINER

